

Amendments to the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An electromagnetic clutch comprising:
a magnetic flux loop forming member including a rotor, an armature and an electromagnet,
having a coil and a yoke, ~~and an armature, and~~ the magnetic flux loop forming member forming a
magnetic flux loop upon excitation of the coil;
a clutch operative to be coupled or uncoupled by the armature that is operatively shifted in
response to an electromagnetic force generating during excitation of the coil; ~~and~~
a proximate member including a shaft member and a support member, the shaft member
being placed closely proximate to the rotor and supporting the magnetic flux loop forming member
via the support member ~~member placed close proximate to the magnetic flux loop forming member,~~
~~wherein; and~~
a magnetic flux leakage eliminating section, including a plurality of spatial areas defined
between an inner peripheral surface of the rotor and an outer peripheral surface of the proximate
member, for at least one of the magnetic flux loop forming member and the proximate member
~~includes a magnetic flux leakage eliminating section~~ eliminating an amount of magnetic fluxes
leaked from the magnetic flux loop forming member to the proximate member during excitation of
the coil.

Claim 2 (canceled)

Claim 3 (currently amended): The electromagnetic clutch according to claim 1 ~~claim~~
~~2,~~ wherein the plurality of spatial areas are ~~spatial area is~~ formed along an axial direction of the rotor
~~a direction of a magnetic flux loop formed in the magnetic flux loop forming member.~~

Claim 4 (original): The electromagnetic clutch according to claim 1, wherein the proximate member is made from material having a lower magnetic permeability than that of the magnetic flux loop forming member.

Claim 5 (currently amended): The electromagnetic clutch according to claim 1, wherein

~~the magnetic flux loop forming member proximate member includes a shaft member, and a~~
~~and the support member are coaxially disposed with the shaft member and having a supporting~~
~~relationship therewith; and~~

~~the magnetic flux loop forming member is coaxially disposed with the shaft member and has~~
~~a supporting relationship with the support member.~~

Claims 6-8 (canceled)

Claim 9 (currently amended): The electromagnetic clutch according to claim 1 ~~claim~~
5, wherein

~~the proximate member is coaxially disposed with the shaft member and further includes a~~
~~rotary member that has a supporting relationship with the magnetic flux loop forming member at an~~
~~outside area in a radial direction of the shaft member, the rotary member being coaxially disposed~~
~~with the shaft member; and~~

~~the magnetic flux leakage eliminating section includes a fourth spatial area defined between~~
~~an outer peripheral surface of the magnetic flux loop forming member and an inner peripheral~~
~~surface of the rotary member.~~

Claim 10 (currently amended): The electromagnetic clutch according to claim 1 ~~claim 2~~ further comprising:

a frictional type main clutch disposed between input and output torque transfer members;
and

a cam mechanism converting a torque, inputted through the clutch, into a pressure force;
wherein

the clutch includes a pilot clutch whereby when the pilot clutch is coupled, the pressure force of the cam mechanism generating when applied with the torque urges the main clutch that is consequently coupled.

Claims 11-12 (canceled)

Claim 13 (currently amended): The electromagnetic clutch according to claim 1 ~~claim 11~~, wherein

the ~~proximate~~ support member is disposed ~~close~~ closely proximate to an end of the magnetic flux loop forming member at an area axially opposite to the armature with respect to the electromagnet.

Claim 14 (currently amended): The electromagnetic clutch according to claim 1,
wherein

the proximate member includes an opposing member operative to allow the armature to be freely shifted through a connecting section located between the armature and the opposing member;
and

the magnetic flux leakage eliminating section includes a spatial area is disposed on the connecting section between the armature and the opposing member.

Claim 15 (currently amended): An ~~The~~ electromagnetic clutch ~~according to claim 14,~~
comprising:

a magnetic flux loop forming member including an electromagnet, having a coil and a yoke,
and an armature, and forming a magnetic flux loop upon excitation of the coil;

a clutch operative to be coupled or uncoupled by the armature that is operatively shifted in
response to an electromagnetic force generating during excitation of the coil; and

a proximate member placed closely proximate to the magnetic flux loop forming member,
wherein at least one of the magnetic flux loop forming member and the proximate member includes
a magnetic flux leakage eliminating section eliminating an amount of magnetic fluxes leaked from
the magnetic flux loop forming member to the proximate member during excitation of the coil,

wherein the proximate member includes an opposing member operative to allow the
armature to be freely shifted through a connecting section located between the armature and the
opposing member; and the magnetic flux leakage eliminating section is disposed on the connecting
section between the armature and the opposing member, and

wherein the connecting section includes a splined section having mutually meshing spline
teeth formed on the opposing member and the armature, respectively; and the magnetic flux leakage
eliminating section includes spatial areas defined between tooth-cut-out portions, formed adjacent to
the spline teeth of at least one of the opposing member and the armature, and the spline teeth of the
other one of the opposing member and the armature.

Claim 16 (currently amended): An ~~The~~ electromagnetic clutch according to claim 14, comprising:

a magnetic flux loop forming member including an electromagnet, having a coil and a yoke, and an armature, and forming a magnetic flux loop upon excitation of the coil;

a clutch operative to be coupled or uncoupled by the armature that is operatively shifted in response to an electromagnetic force generating during excitation of the coil; and

a proximate member placed closely proximate to the magnetic flux loop forming member, wherein at least one of the magnetic flux loop forming member and the proximate member includes a magnetic flux leakage eliminating section eliminating an amount of magnetic fluxes leaked from the magnetic flux loop forming member to the proximate member during excitation of the coil,

wherein the proximate member includes an opposing member operative to allow the armature to be freely shifted through a connecting section located between the armature and the opposing member; and the magnetic flux leakage eliminating section is disposed on the connecting section between the armature and the opposing member, and

wherein the connecting section includes a splined section having mutually meshing spline teeth formed on the opposing member and the armature, respectively; and the magnetic flux leakage eliminating section includes spatial areas defined between tooth-height adjusted teeth, formed adjacent to the spline teeth of at least one of the opposing member and the armature, and the spline teeth of the other one of the opposing member and the armature.

Claim 17 (original): The electromagnetic clutch according to claim 14, further comprising:
a frictional type main clutch disposed between input and output torque transfer members;
and

a cam mechanism converting a torque inputted through the clutch into a pressure force;
wherein

the clutch includes a pilot clutch whereby when the pilot clutch is coupled, the pressure force of the cam mechanism generating when applied with the torque urges the main clutch that is consequently coupled.

Claim 18 (currently amended): An electromagnetic clutch device comprising:
a magnetic flux loop forming member including a rotor, an armature, an electromagnet, having a coil and a yoke, ~~a rotor, an armature~~ and a friction plate whose rotation is limited through shifting operation of the armature and operative to allow magnetic fluxes to pass to form a magnetic flux loop upon excitation of the coil; and

~~a plurality of proximate members~~ member including a shaft member and a support member supporting the shaft member, the shaft member being placed closely proximate to the rotor and supporting the magnetic flux loop forming member via the support member placed close proximate to a circumferential circumference of the magnetic flux loop forming member; wherein

a plurality of spaced portion is portions are formed in a part of opposing surfaces between the magnetic flux loop forming member and the proximate member ~~with a view so as to decreasing decrease~~ a magnetic permeability of magnetic fluxes passing from the magnetic flux loop forming member to the proximate member for permitting the magnetic fluxes to be directed in a direction of the magnetic flux loop.

Claim 19 (currently amended): The electromagnetic clutch according to claim 18, wherein

the spaced ~~portion is~~ portions are formed of ~~a plurality of~~ air gaps, respectively, defined between the magnetic flux loop forming member and the proximate member.

Claim 20 (currently amended): The electromagnetic clutch according to claim 19, wherein

the spaced ~~portion is~~ portions are formed of ~~a plurality of~~ air gaps, respectively, defined between at least a component ~~one of components~~ of the magnetic flux loop forming member and the proximate member.

Claim 21 (original): The electromagnetic clutch according to claim 19, wherein
the proximate member is made from material with a lower magnetic permeability than that of the magnetic flux loop forming member.

Claim 22 (original): The electromagnetic clutch according to claim 19, wherein the plurality of air gaps are disposed in at least one of an axial direction and a radial direction of the rotor.

Claim 23 (original): The electromagnetic clutch according to claim 19, wherein the plurality of air gaps are disposed at spaced intervals in an axial direction.

Claim 24 (canceled)

Claim 25 (new): The electromagnetic clutch according to claim 1, further comprising: a seal member disposed between the magnetic flux loop forming member and the shaft member, wherein

at least one of the plurality of spatial areas is formed on each side of the seal member along an axial direction of the rotor.

Claim 26 (new): The electromagnetic clutch according to claim 1, wherein the support member is a non-magnetic support ring.

Claim 27 (new): The electromagnetic clutch according to claim 1, further comprising: a pilot clutch disposed between the electromagnet and the armature; and a cam ring engaged to the pilot clutch, wherein the cam ring includes a support portion supporting the shaft member and a spatial area is defined between the outer periphery surface of the shaft member and an inner periphery surface of the cam ring.